

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number
WO 2005/059951 A2

(51) International Patent Classification⁷:

H01L

(74) Agent: **GILANI, Anwar**; c/o Cambridge Display Technology Limited, Building 2020, Cambourne Business Park, Cambridgeshire CB3 6DW (GB).

(21) International Application Number:

PCT/GB2004/005392

(22) International Filing Date:

20 December 2004 (20.12.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0329364.4 19 December 2003 (19.12.2003) GB

(71) Applicant (for all designated States except US): **CAMBRIDGE DISPLAY TECHNOLOGY LIMITED** [GB/GB]; Building 2020, Cambourne Business Park, Cambridgeshire CB3 6DW (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **PATEL, Nalinkumar** [GB/GB]; c/o Cambridge Display Technology Limited, Building 2020, Cambourne Business Park, Cambridgeshire CB3 6DW (GB). **CONWAY, Natasha** [GB/GB]; c/o Cambridge Display Technology Limited, Building 2020, Cambourne Business Park, Cambridgeshire CB3 6DW (GB). **LEADBEATER, Mark** [GB/GB]; 77 Sturton Street, Cambridge CB1 2QG (GB). **GRIZZI, Ilaria** [IT/GB]; c/o Cambridge Display Technology Limited, Building 2020, Cambourne Business Park, Cambridgeshire, CB3 6DW (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

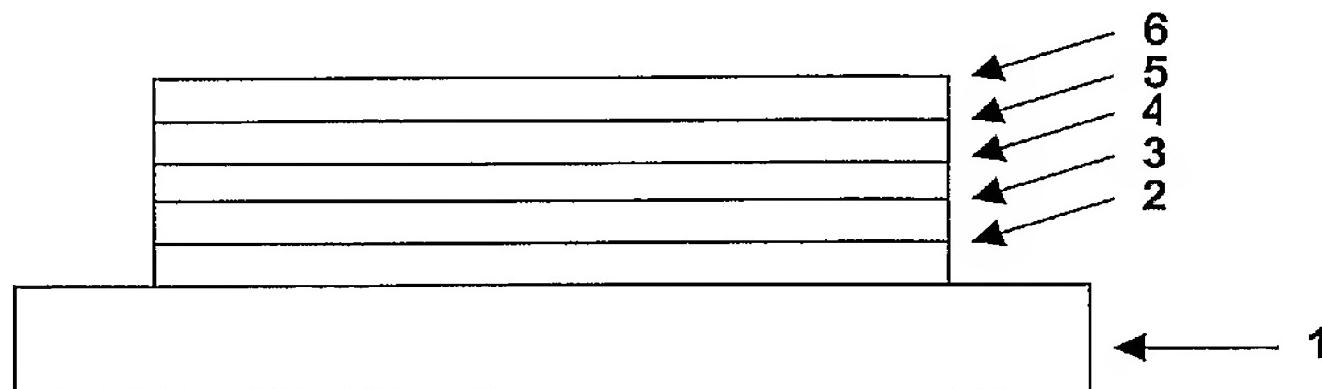
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: OPTICAL DEVICE



WO 2005/059951 A2

(57) Abstract: A method of forming an organic light emitting diode comprising the steps of: - providing a substrate comprising a first electrode for injection of charge carriers of a first type - forming a charge transporting layer by depositing over the substrate a charge transporting material for transporting charge carriers of the first type, the charge transporting material being soluble in a solvent; - treatment of the charge transporting layer to render it insoluble in the solvent; - forming an electroluminescent layer by depositing onto the charge transporting layer a composition comprising the solvent, a phosphorescent material and a host material; and depositing over the electroluminescent layer a second electrode for injection of charge carriers of a second type.